ARPHA Proceedings

Proceedings ICESS 2025, 0507–0525
doi: 10.3897/ap.10.e0507

ISSUES AND OPPORTUNITIES FOR DUAL VOCATIONAL EDUCATION IN THE SECONDARY SCHOOLS OF BULGARIA, GERMANY AND AUSTRIA – A COMPARATIVE ANALYSIS

Valeria Toncheva

Abstract: *This paper presents a description and comparison of the dual vocational education systems in high schools in Bulgaria and selected European countries. Although dual vocational education and training (dVET) is among the priorities of the Ministry of Education and Science of the Republic of Bulgaria until 2030, there are few in-depth studies or statistical data available on the system, as well as its advantages and disadvantages. The aim of this study is to compare Bulgaria's dVET system with those of the most developed countries in this area—Germany and Austria, to highlight their strengths and problematic areas, and to provide an answer as to where Bulgaria's efforts should be concentrated. The methodology used is two-phased: an analysis of secondary data/archival research (using legislative documents, government websites, studies from national and international organizations and academic publications) followed by the collection of primary data through personal interviews with principals and vice-principals of dVET high schools in the Plovdiv region, Bulgaria. The research reveals that while the systems have similarities, there are also significant differences that show the need for betterment in Bulgaria. The conducted interviews highlight the challenges faced by schools in finding partner companies and the need for additional incentives on the national level to promote work-based learning. The dual education in Bulgaria is at a relatively early stage of development, and despite its success, there is room for improvement. Empirical evidence is needed regarding the effects of implementing this educational method and the impact of the brand image of vocational high schools on the behavior of stakeholders (students, teachers, administrators of schools, employers providing internships for students, and government experts).*

Keywords: *Business, Dual VET, Professional high school education.*

I. Introduction

In recent years, Dual Vocational Education and Training (dVET) has been a common focus for educational reforms across Europe, gaining popularity as a strategic method for reducing youth unemployment and aligning educational outcomes with labor market needs. This approach, characterized by the integration of traditional classroom-based learning with practical training in real companies, is widely established in countries like Germany and Austria,

where it has proven to be an effective pathway to workforce readiness and economic stability. Bulgaria on the other hand is within its first decade of providing dual training in secondary education and the implementation process has encountered many unique challenges and issues. Despite the Bulgarian Ministry of Education's prioritization of dVET, comprehensive studies on the system's benefits, limitations, and impact on stakeholder perceptions remain limited.

This research seeks to fill a part of this gap by providing a comparative analysis of dVET in Bulgaria alongside the well-developed systems in Germany and Austria. Specifically, it examines the education structures, successes, and obstacles faced in each country, aiming to highlight practical areas for improvement and identify strategies to enhance the integration of dVET into Bulgarian vocational high schools. This is achieved through a two-phase approach to the research – phase number one being the analysis of secondary data gathered about Bulgaria and comparing it to data, focused on dVET in Germany and Austria, thus drawing conclusions about the differences between the two countries that pioneered the method and one that is in the process of introducing it. The second phase of the study is a series of personal interview with the heads of VET schools in the region of Plovdiv in Bulgaria, discussing the issues of dVET, possible solutions and plans for the future. Quotes are presented anonymously to showcase the state of the dual education and its possible paths for betterment.

More research about the dVET system in Bulgaria could inform future educational policies, lead to the improvement of the system, and achieving the goals set on a national level, which will in turn impact the economy of the country in a positive way.

II. The dual vet system

A. The Essence of Dual Education

The Preschool and School Education Act of the Republic of Bulgaria [1] defines Dual Vocational Education and Training (dVET) as a form of education through which students acquire professional qualifications by combining school-based learning with practical training in a real work environment. The Vocational Education and Training Act regulates the dual system as one of the forms of vocational education where education "is organized based on a partnership between one or more employers and an institution within the vocational education and training (VET) system, a secondary school, specialized high school, or religious school, when it provides professional training". [2]

Theoretical training in schools follows curriculum frameworks based on the national education

standards for acquiring one of the professions approved on a national level. Practical training is mainly organized in the last two grades and is conducted in training work spaces provided by employer companies, under the guidance of a qualified mentor. The VET act in Bulgaria [2] also defines a "mentor" as an employee designated by the employer who leads the practical training in the real work environment.

Training in specific fields is delivered by a qualified "teacher-methodologist," who, besides professional qualifications, has experience teaching the professional skills required. Companies are directly involved in this educational process, and can interview and select students as early as the 8th grade, with whom they will work when they reach the 11th grade.

In the literature focused on dual education in European countries, several primary objectives of this type of training are highlighted [3], [4]. The first is improving the quality of education and the skills acquired by students. By using dual training the curriculum and materials are updated and expanded to align with modern technologies used in the private sector. Students gain the professional skills, knowledge, qualifications, and experience needed to perform skilled work [5], enhancing their employment prospects after graduation. Additionally, young people are motivated to perform well by receiving a wage for their internship work during the final two years of their secondary education. Vocational high schools benefit from private investments made by partner companies, which help improve the material and technical resources of the educational institutions.

Achieving high-quality employment among graduates and addressing youth unemployment can be identified as the second primary objective of dVET. According to Eurostat statistics (Figure 1), the average youth unemployment rate among 20- to 29-year-olds in Europe is lower for those with vocational secondary education compared to those with general secondary education or those who have completed non-vocational secondary education. From 2015 to 2023, youth unemployment for vocational school graduates decreased by 5.4%, compared to a 4.6% decrease for general secondary education graduates [6].

A study conducted by the Federal Ministry of Education and Research of Germany [7] concludes that "countries with dual systems have particularly low levels of youth unemployment." This can be exemplified by the table of youth unemployment rates for 2023 for individuals aged 20-29 in the countries with the most experience with dVET [8], according to Eurostat data [6].

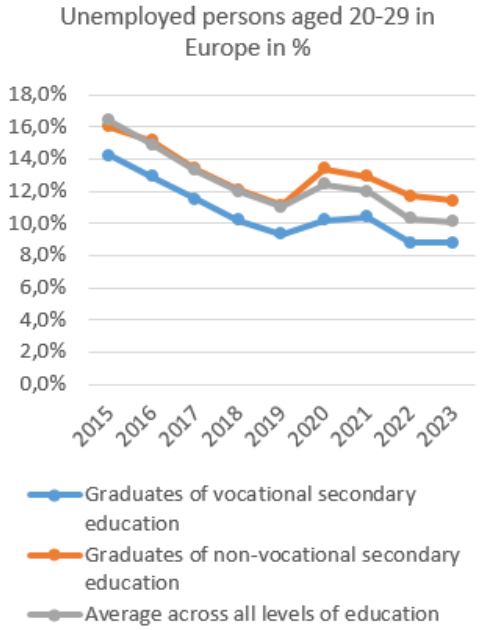

Figure *1. Distribution of Unemployed Individuals Aged 20–29 in Europe (%)*
Source: Chart created by author based on Eurostat data (2024)[6]

Table 1. *Youth Unemployment Rates for All Individuals between 20-29 years of age, in %*

2023	Secondary VET graduates	General secondary education graduates
EU average	8,8 %	11.4 %
Germany	2,6 %	5.9 %
The Netherlands	3,4 %	7.3 %
Switzerland	4,7 %	7.3 %
Austria	5,8 %	9.8 %

Source: Compiled by the author using Eurostat data (2024)[6]

A study by the Federal Institute for VET in Germany [4] also finds that individuals without professional qualifications are at a higher risk of unemployment. Additionally, these individuals earned significantly less on average than employees who had completed VET" [4, 51 p.].

The third major objective of dVET is to meet businesses' needs for qualified personnel. By training some of the graduates in their region, employers ensure that there is a pool of workers in the labor market who meet all their requirements. Many interns remain employed at the com-

pany that trained them during their last years of secondary education. While Bulgaria does not maintain official statistics, in Germany, 77% of graduates stay with their training company after graduation. [9]

III. Comparative analysis between Bulgaria, Germany and Austria

A. Educational System in Germany

In Germany, compulsory schooling begins at age six, following kindergarten. After four years of primary school, students are divided into three main types of secondary institutions:

1. Gymnasium: This is a nine-year academic program that culminates in a qualification for university admission.
2. Realschule: This six-year school provides a less demanding academic curriculum, leading to a diploma that certifies good academic skills.
3. Hauptschule: Typically, this is a five-year program designed for students with limited academic ability or interest. Graduates receive a certificate when leaving the school.

After graduating from Gymnasium, students may continue to higher education with an academic focus. Graduates of Realschule and Hauptschule often enter vocational high schools at the age of 15 or 16, where they further qualify through the dual education system for an additional two to four years. Graduates may then apply to universities of applied sciences, which emphasize practical training [10]. Table 2 provides a simplified visualization of the German education system for easier comparison with other countries discussed in this study.

Table 2. *German Education System*

<table>
<tr><td></td><td colspan="2">University of Applied Sciences</td><td>Academic university</td><td></td></tr>
<tr><td>Grade</td><td colspan="3"></td><td>Age</td></tr>
<tr><td>13</td><td colspan="2" rowspan="3">VET high school</td><td rowspan="5">High school (Gymnasium)</td><td>18/19</td></tr>
<tr><td>12</td><td>17</td></tr>
<tr><td>11</td><td>16</td></tr>
<tr><td>10</td><td>Extra grade</td><td rowspan="2">Middle school (Realschule)</td><td>15</td></tr>
<tr><td>5-9</td><td>General middle school (Hauptschule)</td><td>10-14</td></tr>
<tr><td>1-4</td><td colspan="3">Primary school</td><td>6-9</td></tr>
<tr><td>-</td><td colspan="3">Nursery, kindergarden</td><td>1-5</td></tr>
</table>

Source: Compiled by the author.

Advantages of the German VET system

1. Early adoption of dual education and popularity: Germany was the first country to implement the dual education system and it remains highly popular. According to data from the Federal Ministry of Education and Research [7], just over half of all students (50.7%) began vocational training in 2021.

2. Wide range of qualification opportunities and adaptability to labor market needs: Vocational training is offered in 362 professions recognized under the Vocational Training Act (BBiG) or the Trade and Crafts Code (HwO).

3. Well-Developed and institutionalized VET research capacity: Germany has a strong infrastructure for VET research, including the Federal Institute for Vocational Education and Training (BIBB) and a national network of research centers that study various aspects of the system to support innovation and improvements. Annual studies and data allow the system to adjust to deviations and address emerging challenges.

Challenges of the German VET system

1. Decline in graduates: In 2021, 1.26 million vocational trainees completed their training, marking a downward trend (2020: 1.29 million; 2019: 1.33 million; 2010: 1.51 million) [7]. According to BMBF studies, this decline is attributed to demographic shifts and a growing tendency among students to pursue a more academic path. As of 2021, professional training had also not fully recovered from the impact of the COVID-19 crisis. A continued decline in vocational education graduates could lead to a shortage of skilled workers in the labor market.

2. Mismatch between demand and supply: As of September 30, 2022, there were 60,400 applicants who had not found a training position (2021: 67,800; 2020: 78,200; 2019: 73,700). Additionally, the number of unfilled vocational training positions increased by 5,700 from 2021 (+9.0%), totaling 68,900. This means that there were more unfilled positions than applicants still seeking a training position, highlighting a national challenge in matching demand with available positions [7].

3. Evaluation of dVET graduates relies entirely on Chamber Exams: The assessment of dual education graduates depends solely on the professional chamber exam, which does not account for academic performance. As a result, students may not take their theoretical studies seriously, potentially limiting their pathway to higher technical education [11].

B. Educational System in Austria

Austria's educational system is also a successful example of vocational and dual education. It includes a preschool stage (ages 1-6), general primary school (grades I-IV), and lower secondary school (grades V-VIII).

In secondary education, there are different institutions for students with high and lower academic abilities. At the high school level, there are various paths students can follow:

- Academic Secondary School (4 years): Designed for students with strong academic achievements and an interest in sciences.
- College for higher VET (5 years): Provides qualifications for fields such as pedagogy, economics, tourism, arts, etc. Graduates can continue their studies at any university but often choose universities of applied sciences.
- School for intermediate VET (1 to 4 years): Offers studies in technical fields, sports, social sciences, nursing, commerce, and more. Graduates can continue with additional courses to obtain a specific profession.
- Dual education VET: After completing a preparatory 9th grade, students can start a 2- to 4-year course in one of about 200 professions through the dual training system. After graduation, they may continue with courses in their trade to earn a master certificates.

Due to the extensive range of educational options, the graphic representation of the system has been simplified. Separate education for people with disabilities, individual education, and more are not shown [12], [13].

Table 3. *Austrian Educational System*

<table>
<tr><td></td><td>University of Applied Sciences</td><td colspan="2">Aditional training courses</td><td>Academic university</td><td></td></tr>
<tr><td>Grade</td><td colspan="4"></td><td>Age</td></tr>
<tr><td>13</td><td rowspan="5">College for higher VET</td><td rowspan="5">School for intermediate VET (1-4 y.)</td><td rowspan="4">Dual education VET (2-4 years)</td><td rowspan="5">Academic secondary school</td><td>18</td></tr>
<tr><td>12</td><td>17</td></tr>
<tr><td>11</td><td>16</td></tr>
<tr><td>10</td><td>15</td></tr>
<tr><td>9</td><td>Preparation year</td><td>14</td></tr>
<tr><td>5-8</td><td colspan="4">Middle school</td><td>10-13</td></tr>
<tr><td>1-4</td><td colspan="4">Primary school</td><td>6-9</td></tr>
<tr><td>-</td><td colspan="4">Nursery, kindergarden</td><td>1-5</td></tr>
</table>

Source: Compiled by the author.

Advantages of the Austrian VET system

1. The vocational education system is widely adopted and robust, with approximately 70-75% of students pursuing vocational tracks, and 31.5% in dual education as of 2022. As of December 2021, a total of 107,593 students were training through apprenticeships in 28,461 companies [14], [15].

2. Hands-On training: Students spend most of their time (80% of school time) acquiring skills through work with partner companies. By comparison, in Bulgaria, work-based training comprises only 40-60% of the program [14].

3. Strong partnership between education and business: According to the European Centre for the Development of Vocational Training (CEDEFOP), the close collaboration between educational institutions and businesses is a defining feature of Austria's educational system, ensuring that curricula align with labor market needs. The government regulates the school program's content, but apprenticeship content is a joint effort involving the Ministries of Economy and Education, provinces, and companies [15].

Challenges of the Austrian VET system

1. Curriculum reform need: According to the Austrian government's 2020-2024 program, dual education requires a curriculum reform, stronger career orientation in schools, and more extensive vocational training as a part of the compulsory education [16].

2. Inclusion of disadvantaged groups and migrants: CEDEFOP [15] and the European Commission [17] highlight the need to better integrate disadvantaged children and migrants into the educational system and, subsequently, the workforce. Unemployment rates among individuals with a migration background are significantly higher than among native Austrians, with the dropout rate being three times higher than that of locals. People with disabilities also face low employment rates.

3. Meeting rising demand for Digital and "Green" skills: The increasing need for digital skills and training in environmental fields is a challenge for Austria, as it is for Germany [15], [11], [17]. These new labor market demands require continuous curriculum updates.

C. Educational System in Bulgaria

The structure of education in Bulgaria has some notable differences and is significantly simpler than those of the more developed countries. After compulsory preschool education, all students enter primary school, where they complete their primary education up to the fourth grade and their middle school education by the seventh grade. After passing a state graduation exam, students can apply to high schools to receive secondary education, which lasts 5 years.

In vocational high schools, the curriculum includes the standard general education required for secondary education in Bulgaria, along with additional training to acquire a professional qualification. Work-based training takes place in grades XI and XII, where students spend 2 days per week in grade XI and 3 days per week in grade XII working on-site at a

partner company. Students can apply to universities in any academic field after receiving their diploma, regardless of whether it was obtained from a vocational or non-vocational high school, as both types of institutions provide the same educational level – secondary education. The professional qualification acquired through vocational education and training is an additional credential and does not replace the educational level diploma.

Table 4. *Educational System in Bulgaria*

	University		
Grade			Age
8-12	Vocational education high school	High school	14-18
5-7	Middle school		11-13
1-4	Primary school		7-10
-	Nursery, kindergarden		0-6

Source: Compiled by the author.

Advantages of the Bulgarian VET system

1. Efforts towards development: Among the positive aspects of the VET system in Bulgaria, the Organisation for Economic Co-operation and Development (OECD) highlights Bulgaria's commitment to developing the system and the efforts made by the government for its improvement [18], [19].

Proof of this commitment is the solid regulatory framework with key legislations, national regulations, and strategic documents in place, such as the Preschool and School Education Act, the Vocational Education and Training Act, the Labor Code, and the Ordinance on the Conditions and Procedures for Work-Based Learning (dual training system). Another important strategic document is the Strategic Vision for the Development of Dual Vocational Education and Training (dVET) in Bulgaria – 2030 by the Ministry of Education and Science (MES), which defines objectives, scope, and public policy instruments to build the national dual VET model [3].

Further evidence is the "Support for the Dual Training System" Project (BG05M2OP001-2.014-0001), implemented by the Ministry of Education and Science from 2020 to 2023, with European funding of 24,425,618.58 BGN through the "Science and Education for Smart Growth 2014-2020" Operational Programme. The project aimed to develop the dual system and strengthen ties between schools and the business sector through ini-

tiatives to raise awareness among students, training for teachers and mentors, and increasing the number of students and employers participating in the VET system [20].

2. Governmental support: Another positive aspect of Bulgaria's dual vocational education and training system, according to the OECD [18], is a well-established institutional system for engaging with businesses. This includes the establishment of the National Agency for Vocational Education and Training (NAVET) under the Council of Ministers. NAVET develops the list of professions for VET, sets state education standards for qualification, and creates strategic documents for dual VET. It also ensures quality control in VET and coordinates institutions involved in vocational guidance, education, and training [21].

3. Increasing popularity: There is a trend toward increasing student participation in dual VET programs. According to the Strategic Vision for the Development of Dual Vocational Education and Training (dVET) in Bulgaria – 2030: "In the 2022/2023 academic year, dual VET is conducted in 182 educational institutions (vocational high schools, specialized high schools, and secondary schools), with 11,609 students enrolled in dual training programs" [3]. There is also a steady trend of increasing the number of schools offering dual training, with this number rising from 151 in the 2020/2021 academic year to 182 in 2022/2023. During the same period, the number of students in dual training also grew from 8,877 to 11,609. Nevertheless, the dual system remains relatively new for the country.

Challenges of the Bulgarian VET system

1. Limited development: The system is relatively new and still underdeveloped. As it was mentioned above only 11,609 students participate in dual VET, too few to significantly impact the national economy. According to a survey by the Bulgarian Employment Agency, many sectors report a shortage of skilled workers, such as machinists, elevator technicians, and mechanics. Respondents also express dissatisfaction with the closure of vocational schools in certain cities and the limited number of well-developed vocational schools [22]. Supporting data from the European Commission's 2022 report indicates that a lack of skilled labor limited the growth of 34.9% of companies in manufacturing and 39.5% in construction [23].

2. Centralization: The strong centralization of the education system can hinder alignment of the private sector needs and the school curricula. The Strategic Vision for the Development of Dual Vocational Education and Training (dVET) in Bulgaria [3] emphasizes that the future development should follow a flexible model to directly address the needs of the

business and give companies more autonomy. This includes the formation of partial dual classes where students can either train with an employer or opt for a non-dual path. Flexibility also allows for switching employers during training and modifying the training format if necessary. Curriculum and training plans should encompass more knowledge and focus on skills needed in the actual workplace environment. The OECD also notes that Bulgaria needs better coordination among VET stakeholders and improved collaboration between ministries for the development of skills [24].

3. Financial barriers for businesses: Another significant issue, highlighted by the OECD, is the high financial and non-financial costs associated with work-based learning, which are burdensome for many companies, particularly small and medium enterprises. Companies must cover mentor wages, mentor training, space for training, and often additional compensation to motivate students. These costs make it challenging for companies to participate in the program. [24] According to the World Bank, under 10% of Bulgarian companies are involved in dual education [19].

4. Need for improved data collection: The World Bank highlights a need for enhanced data collection, processing, and use regarding VET. "Currently, data to assess the quality and relevance of VET are not systematically collected and analyzed, which prevents evidence-based policy making." [19 p. 11]. Research like the one presented in this paper is essential and can inform future policies in the field.

D. Conclusions

Dual secondary education offers numerous advantages, yet it is still characterized by problems and limiting factors, even in the most advanced countries. In Bulgaria, the lack of statistical data and research is a notable gap, as pointed out by the World Bank. Comprehensive studies need to be done on the issues when implementing dVET in Bulgaria, the satisfaction, attitudes, perceived quality, or brand loyalty among users of dual secondary education.

IV. Primary data study

A. Structure of the Study and Target Groups

Due to the specifics of the research subject, namely the issues of an educational service, the author has decided to interview the people who deliver and manage it – the school administration. To conduct the research, the method of the anonymous semi-structured in-depth interview was chosen, where several predetermined questions were asked, but follow-up questions were also posed during the conversation, depending on the responses of the interviewee. The questionnaire used in conducting the in-depth in-

terviews was structured around 3 key questions:

1. "What are the problems that the administration and students face when implementing dual education?"
2. "Do you plan to increase the number of dual classes in the upcoming school year?"
3. "What can be done to facilitate the development of dual education?"

B. Conducting the Study

The study was conducted between April 16-29, 2024.

According to data from the Education Information Assurance Center (CIAC) of the Ministry of Education and Science, for the 2022/2023 academic year, as of December 16 2022, 14 schools in the Plovdiv region have classes with dual education. The scope of this study includes only vocational schools, which are 12. Seven of these are located in Plovdiv, and one each in Perushtitsa, Parvomay, Karlovo, Sopot, and Asenovgrad. Three of these institutions were excluded from the study due to the fact that they had recently started dual education programs and did not yet have students in the 11th or 12th grades participating in work-based learning. These schools are: the Professional School of Railway Transport "Hristo Smirnenski", Karlovo; the Professional School of Mechanical Engineering, Plovdiv; and the Professional School of Agriculture "Vasil Levski", Parvomay. One school – the Vocational School of Viticulture and Enology "Hristo Botev", Perushtitsa was also excluded because of the fact they only offer dual education to 4 students, thus having less insights into the program.

Eight vocational schools met the conditions for inclusion in the study. These schools are: the Vocational School "Tsar Ivan Asen II", Asenovgrad; the Vocational School of Viticulture and Enology "Hristo Botev", Perushtitsa; the Vocational School of Transport and Construction Technologies "Gotse Delchev", Plovdiv; the Vocational School of Food Technology and Engineering, Plovdiv; the Vocational School of Electrical Engineering and Electronics, Plovdiv; the Vocational School of Fashion Design "Ana May", Plovdiv; the Vocational School of Interior Architecture and Woodworking "Hristo Botev", Plovdiv; the Vocational School of Mechanical Engineering "Professor Tsvetan Lazarov", Plovdiv; and the Vocational School "General Vladimir Zaimov," Sopot.

The schools included in the study were visited in person and a face-to-face conversation was conducted with at least one member of the administration (principal or vice-principal), who also acted as the contact point between the dissertation author and the school.

C. Interview answers

Question 1.
"What are the problems that the administration faces with the dual education program?"

The problem mentioned by almost all schools included in the survey is the difficulty in finding partner companies for dual education.

"We intend to terminate the admission for one of the dual education classes at our school. We have a significant problem finding companies that will take students for practical training. When the school year is about to start, we go door-to-door trying to convince companies to accept students. In some cases, companies agree but later back out at the last moment." – A.V., Vice-Principal of a vocational high school.

"This year [2024], the Plovdiv Regional Educational Office invited employers in the region to submit requests for dual education classes and indicate new majors they want to train as dual VET. From what I know, not even one company submitted the documents in the set time frame. Then, we – the schools – had to go to the companies ourselves and gather the applications." – S.O., Vice-Principal of a vocational high school. [REO Plovdiv have given no statement confirming or denying this quote.]

"It's very difficult for us to find companies for internships. There are large firms in the sector, but apparently, they don't want to deal with training students. It's a big responsibility, and not all suitable companies are willing to take it on." – D.O., Vice-Principal at a vocational high school.

Among the major problems faced by educational institutions working with the dual education model, the issue of transportation and transportation costs stands out:

"The partner companies are located outside the city, and there is no public transport to the more distant employers. The transportation costs for students and teachers who go for inspections at the companies are covered by the school." – S.O., Vice-Principal of a vocational high school.

"The school covers the transportation costs for the students to and from industrial zones. The transportation expenses for colleagues who travel to companies are also covered. One teacher may need to visit 10 companies over long distances within a couple of days. It's impossible to do this using the public transport." – A.G., Principal of a vocational high school.

The respondents placed significant emphasis on the burden of creating study plans for students.

"The school prepares an enormous amount of documentation. We have 26 students, each 2 or 3 distributed at a different company. You have no idea how heavy the paperwork load is. With each company, we are expected to negotiate a

training plan for the students. Large companies have an HR department to handle this work and process the documentation, but small companies don't have the staff to do it. The company's owner doesn't have time to focus on our regulations to create a training plan." – V.P., Vice-Principal of a vocational high school.

"Companies don't want to stick to the exact plan provided by the Ministry of Education because the work in each company is specific. When working with 13 companies, students in the same class learn 13 different things, and the school has to fill in the gaps." – A.A., Vice-Principal of a vocational high school.

"The paperwork is extensive. We work with dozens of companies individually to develop training plans." – A.G., Principal of a vocational high school.

A key disadvantage of the current system, mentioned once by school representatives, but seen as particularly important by the interviewee, is the lack of connection between students and companies.

"The biggest problem, in my opinion, is that companies and students don't meet until the 11th grade. These kids don't feel a sense of belonging to the dual education and don't even realize, until the 11th grade, that they are in a dual program or what that means. We had a good case practice with one company, where representatives met the students on the first day of school of the 8th grade, gave them gifts–like backpacks with the company logo–invited the entire class to visit the production facility, told them about the company, and frequently attend school events. These kids know what dual education is, and when we ask them, they know they'll be working at that company in the 11th grade, and they are excited about it. This should be the standard practice." – M.E., Principal of a vocational high school.

Another issue that needs attention is the mismatch between the expectations of companies and what vocational schools offer.

"We've identified a problem with employer expectations. For example, they take a group of students, and after some time, they come to me and say one of them isn't performing as well. Companies need to understand that if they take seven students for an internship, it's not guaranteed that all seven will stay as employees. There are those who excel and are naturally suited for the profession, and there are weaker ones. Some are deeply interested, while others might have been directed by their parents to pick this profession or have already shifted their interests toward another career path after graduation. The company needs to understand that they can't just replace students once they've committed to training them, and they can't expect 100% of students to stay as employees after graduation." — D.O., Principal of a vocational high school.

Question 2.

"Do you plan to increase the number of dual education classes in the next school year?"

"I cannot open more dual classes because, otherwise, all of my teachers will become mentors and will have to visit companies with the students. This creates discrepancies with the teachers' workload. There won't be anyone left to teach at the school." – D.O., Principal of a vocational high school.

Once again, the difficulty in finding partner companies was emphasized in response to this question.

"We've reached the maximum capacity for developing dual classes at the school. You go to a company, and the employer doesn't want the students. How are you supposed to find such employers?" – A.A., Vice-Principal of a vocational high school.

However, there were also positive responses from schools planning to expand the program.

"Yes, we are striving to open more dual classes because, in our view, this is the future of vocational education. Each year, we expand the scope of the program, and we will continue to do so in the following years." – A.V., Principal of a vocational high school.

"This year, we opened a new class, and we plan to continue adding more in the coming years. It's difficult to manage, but it's worth it. Our students graduate with a trade, they are even ready to start their own businesses." — V.P., Vice-Principal of a vocational high school.

Question 3.

"What can be done to facilitate the development of dual education?"

A common response during the interviews was the need to reinstate funding from the Ministry of Education, which was discontinued after the completion of the project BG05M2OP001-2.014-0001 "Support for the Dual System of Education," funded by the Operational Programme "Science and Education for Smart Growth" 2014-2020.

"Workers in partner companies do not want to be mentors to the students. No one wants to take on additional responsibilities or be accountable for the safety of underage students without extra incentives. You can't motivate someone to be a mentor if they don't receive additional pay. You can't legally require companies to pay mentors, because they will simply stop taking students. Under the project we had until last year ["Support for the Dual System of Education"], mentors were paid a decent amount, but now no one wants to be a mentor. The Ministry of Education needs to ensure additional pay or incentives for mentors." – V.P., Vice-Principal or of a vocational high school.

"The company mentors lack pedagogical training. At our school's

expense, I plan to train the mentors the next school year. They are excellent professionals, but working with children is different. However, other schools don't have the financial resources to pay for such a training. This is essential! The Ministry of Education must continue the 'Support for the Dual System of Education' project." – P.H., Vice-Principal of a vocational high school.

Another focus of the responses was the need for help in finding companies for internships.

"More support from the Ministry of Education in finding companies to partner with. They gather us and tell us that we must implement dual education because it's the future of education. Perhaps an electronic system should be created to connect employers from the region with the school." – D.O., Principal of a vocational high school.

VIII. Conclusion

A. Summary of Key Findings

In summary, the key difference between the dVET systems in the three reviewed countries is that when compared to Germany and Austria, in Bulgaria the freedom to switch career paths is much greater. In the two more developed countries, the students that go into the vocational education path mostly either finish their education there or continue with a University of applied sciences, while in Bulgaria it is common for students to apply for an academic university and go into a radically different direction with no need for additional courses or acquiring additional qualifications to be able to change the career path. The system in Bulgaria is also much more simple and at a much earlier stage of development. While the countries with decades of experience focus on inclusion and innovation, Bulgaria has to work on the basics like popularizing the system, motivating companies to participate and ironing out the issues with the school curriculums and organizational difficulties faced by schools.

B. Implications of the Findings and Recommendations for Improvement

From the conducted research it becomes evident that the dual system in Bulgaria needs more governmental assistance to catch up to those in Germany and Austria. At the time of this publication in November 2024 the Ministry of Education and Science in Bulgaria has announced plans to resume the project funding the Dual education system. Some of the concerns outlined by the interviewed principals are to be addressed, namely the additional pay and training for mentors. Other issues remain, the greatest ones of which are the lack of detailed nationwide research data on the dual VET and its impact as well as the difficulty in matching schools with companies for the training of students. The

findings of the interviews could be used while planning future projects on a national level or to initiate discussions on the course of action to be taken to improve and develop dVET in Bulgaria. The evident need for assistance with connecting the schools with the business sector could be a catalyst for a new networking system to bridge this gap or for the introduction of more incentives for participating businesses.

C. Limitations of the Study and Suggestions for Future Research

The gathered secondary data compares the Bulgarian education system to that of only two other countries, when almost all EU countries practice dual education in some form. The primary data study is only limited to one region of Bulgaria. Future research can focus on comparing Bulgaria with other developing nations and expand the data gathering to include other regions of Bulgaria, other target groups such as students, teachers, mentors and managers of involved companies, as well as national and local government bodies, working for providing dual education. Such additional studies can paint the whole picture of the dual education system in Bulgaria and allow its government to make more informed decisions about its future.

Acknowledgements

I would like to express my most sincere gratitude to my PhD supervisor, Assoc. Prof. Dr. Teofana Dimitrova of Plovdiv University "Paisii Hilendarski, Bulgaria, for her invaluable mentorship, guidance and support throughout this research process.

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AUTHOR PROFILE

Valeria Toncheva has a bachelor's degree in International economic relations and a Master's degree in Marketing from Plovdiv University "Paisii Hilendarski" in Bulgaria. She is completing a PhD in Marketing in the university with the topic – "Impact of the dual education on the brand image of vocational high schools". You can find her publication „The case of the Municipality of Plovdiv" in the 2022 monograph "The reindustrialization of Bulgaria – Mission possible. Best Practices and Cases from the Region of Plovdiv and Trakia Economic Zone." by Vladikov, A. et al. published by Plovdiv University "Paisii Hilendarski. Another of her papers written for the Jubilee International Scientific Conference "The interdisciplinary approach in economic and social sciences" in 2024 is called "The Influence of Dual Education on the Brand Image of Vocational High Schools".

E-mail: toncheva.valeria@gmail.com